EVOLVE

Parking Enforcement
Then & Now

gtechna
Electronic Citation Software

3M

CALE
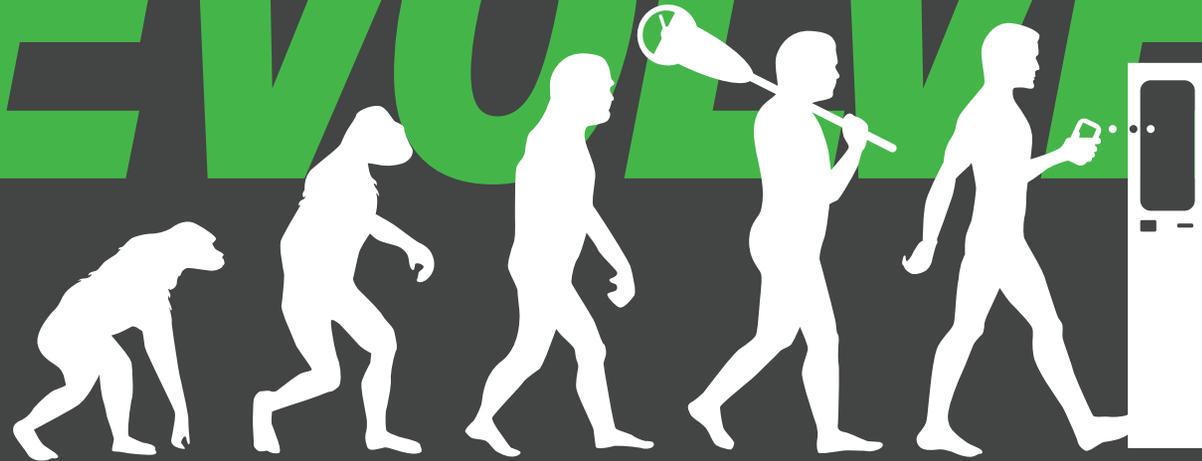AMERICA

On a late summer Tuesday morning, Rev. C.H. North, pastor of the Third Pentecostal Holiness Church in Oklahoma City decided to drive downtown to buy a few things from the hardware store. When he pulled up to the curb and got out of his automobile, he noticed something new: A mechanical contraption on a pole was planted at the edge of the sidewalk, near the curb. The instructions printed on the side of the meter stated that anyone who wanted to park there had to pay 5¢ for an hour's worth of that privilege.
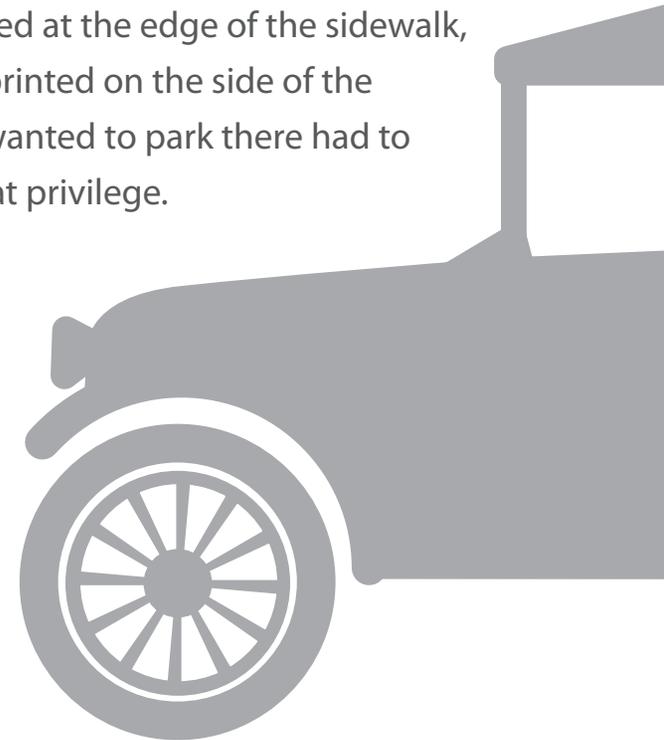
Rev. North, being an honest and law-abiding man, as benefited his position in the community, simply shrugged and stuck his hand in his trouser pocket and pulled out his change: a quarter and a couple of pennies. No nickels. Shrugging again, he strolled into the hardware store and asked the clerk for change for the quarter, then went back out onto the sidewalk to put the nickel into the machine. Even as he was dropping the coin into the slot – just like dropping a penny in those weight machines at the drug store – he noticed a piece of white paper on the front seat of his automobile. When he picked it up, he was shocked to find that it was a court summons: He was being fined a huge amount – twenty dollars! – for the charge of "failure to pay municipal parking fee."

So, on August 6th, 1935, the good minister went down in history as the first person to ever get a ticket for an expired parking meter. He also later established a new record as being the first – and subsequently among the very, very few – to beat the ticket by pleading before the judge that he was "just getting change."
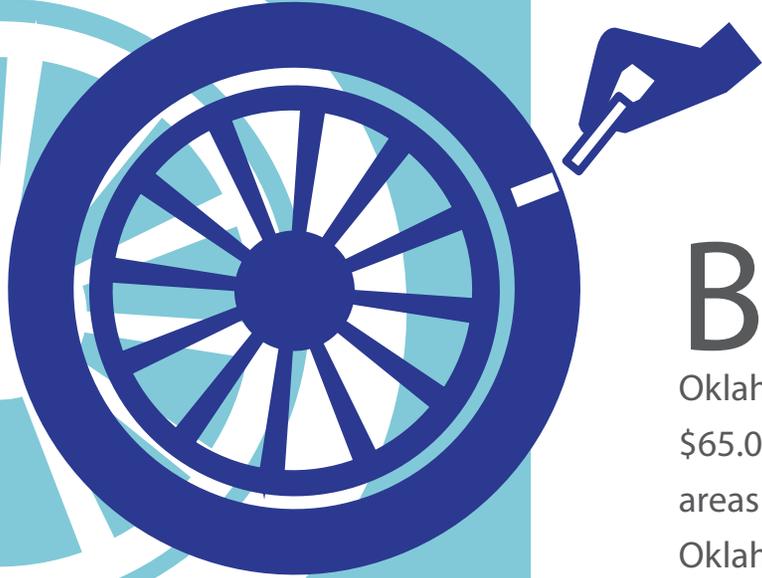
By modern standards, the fine-to-fee ratio for parking tickets in 1930s Oklahoma City was huge. At 400:1, it far outstrips even San Francisco, with a $65.00 fine, versus an hourly parking fee of $4.25 per hour in high-demand areas of the city. Yet, the original purpose of establishing metered parking in Oklahoma City was not to gain revenue for the city, but to increase shopping in the stores located downtown. With more than a half million motor vehicles registered in the state by 1930 – most of them in the state's capital city and county – parking congestion had become a burden to Oklahoma City merchants. Store owners wanted, needed, parking spaces made available to customers, not monopolized by local office workers. Although parking time limits were posted on street signs, enforcement had been limited to a small force of traffic police who relied on a system of placing chalk marks on the tires of parked cars and checking later to see if the cars had been moved.

Merchants' complaints about the parking situation soon reached the city council, which asked the Chamber of Commerce to help find a way to reduce parking congestion on downtown streets. A leading citizen, Carl C. Magee, editor of The Oklahoma City News, was put in charge of a committee to try to find a way to free up parking spaces. Automated timers were an obvious solution and, after some time fiddling with various systems, Magee was able to modify a timing device used in the oil drilling fields to set off nitroglycerin explosives. Not realizing how apt the source of this new parking timer would become, Magee presented his invention to the city council. On July 16, 1935, the first 175 of these new meters – manufactured by MacNick Company in Tulsa – were placed along the curbs in the main shopping district of Oklahoma City.

The public reaction was immediate and furious. This was, after all, the West where the "free range" cattlemen and fence-building homesteaders had gone to guns just a generation earlier; the parallels were noted. The legality of the meters was challenged, and it took two years before the Oklahoma courts declared in the city's favor. Even as the legal battle was winding its way through that state's courts, other towns and cities throughout the country were beginning to adopt the concept of parking meters. Not only did they keep up a brisk turnover of potential customers in downtown stores – an important business consideration – but the added revenue from parking fees and fines were not scorned by the cities' treasurers.

By 1940, with more than 140,000 parking meters in operation, they had become an established part of the urban landscape in many American cities and large towns. What had not been settled, however, was public opinion. In the decades since 1935 – and certainly still true today – the parking meter has become a symbol of the low-intensity conflict between drivers and parking enforcement forces. Neither side shows any sign of backing down, even nearly 80 years after the first ticket was issued. Every token, slug, foreign coin and other object that would fit in the coin slot has been used (including, in one memorable instance in Rhode Island, a gold wedding ring!) to try to avoid paying for a parking space.

B ut, let's not forget, parking enforcement serves and positively impacts the majority of citizens and therefore serves a greater good. Enforcement is an invaluable service without which bustling cities would soon become an entangled mess. Fast-forward to present day and the high adoption rate of electronic citations or e-Citations and related emerging technologies have again transformed how parking rights are acquired and enforced. On the side of the law and orderly, parking fines for expired meters have naturally risen in lock step with inflation and regulatory policy. At the same time, with the advent of more efficient technologies less costly solutions have reduced fiscal burdens on cities and taxpayers. Scofflaw violators who choose to ignore parking regulations and consequently, receive parking tickets or eCitations, risk having their cars towed or booted and impounded costing hundreds of dollars in operational expenses and administrative fees. Fortunately, it is primarily those who abuse and take advantage of laws in place to promote public order that foot the bill for parking violations leaving the average law abiding Jane or Joe, to continue her/his harmonious existence.

Parking Wars

Parking meter vandalization dates back almost to the first year of their introduction. Coin slots are jammed, poles are bent to the ground, meters are bashed into scrap metal and some are simply stolen (and not just for profit, although it must not have taken long before someone realized, "Look! A piggy-bank on a stick! Out here on the street!" with obvious results).
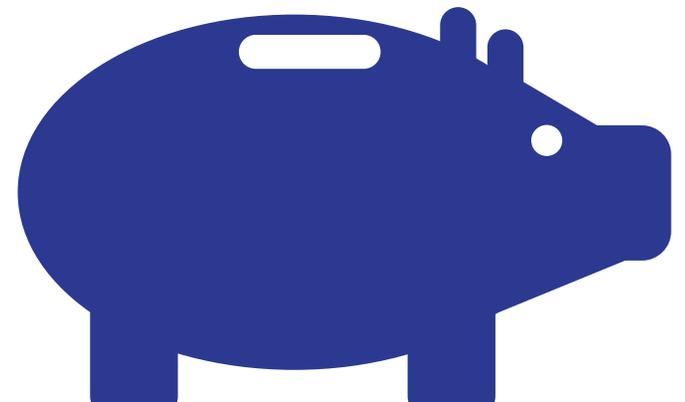
It shouldn't be surprising that the incidence of meter sabotage spikes just after parking rates are increased. In Chicago, after a meter rate increase, 579 incidents of damaged or destroyed meters were reported just from April through August 2009, including 50 meters destroyed in just one night along four blocks in the Uptown district. Keeping with the times, some vandals have even taken videos of their efforts to "smash the (parking) machine," and post the results on the Internet. In reaction, meters are being made more robust, poles increased in strength and mechanisms designed to be more tamper-proof. The damage to or loss of a meter is not inconsequential: A meter costs, on average, $650.00 to replace. In addition, while the meter is out of action, the municipality suffers a loss of revenue from fees and/or fines. Vandalism represents a substantial loss to a city. Parking income can represent revenue in the millions. A positive cash flow from parking fees and fines can help bolster the overall budget and the net benefit to citizens through reinvestment in city infrastructure.
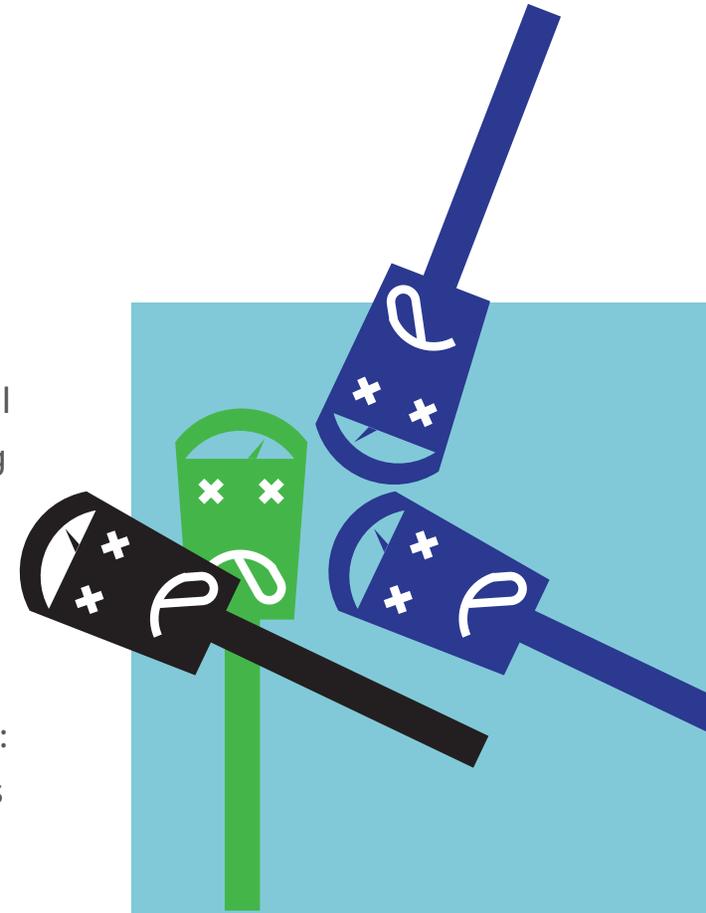
Day after day, parking enforcement – and ticketing – goes on, sometimes resulting in confrontation between car owners and municipal employees. There is even a new term for the reaction to finding an officer issuing an e-Citation at an expired meter: ticket rage. Verbal abuse, even physical attacks, by irate recipients of tickets is reported every year by parking enforcement officers. The number of assaults on parking enforcement officers issuing parking tickets had increased so sharply in previous years that, in 2007, the California legislature considered raising the charge for an attack on a parking enforcement officer to a felony.

Entire Internet blogs are dedicated to parking issues and some attorneys specialize in the field. In a sure sign of the mainstreaming of ticket rage, the cable network A&E began showing the popular series "Parking Wars" in 2008, which follows the drama of street justice, so to speak, in American cities. The Beatles' song extolling the virtues of lovely Rita, the meter maid, would not find much purchase today.

Fortunately, improvements in the speed of ticket issuance allow officers to get in and out before a situation can arise. Further, technology such as License Plate Recognition cameras or PDA handhelds equipped with cameras and e-Citation software make parking disputes a pointless endeavor. Much to the frustration of those 'ticket ragers', digital proof renders the old "I was just getting change" defense completely moot.

Municipal parking bureaus are not about to surrender, even in the face of guerrilla resistance. Rather than just continuing the escalation of defensive armor versus the increasing level of violent attack (after all, the Battle of Verdun predates even parking meters), city parking bureaus are re-examining the entire model of parking meters and fee enforcement. While the primary goal, to keep a healthy turn-over of parked cars on the street, is still valid, the landscape has changed. Long-term parking facilities – both private and municipally owned – should free up street parking for brief parking needs. In addition, the entire concept of a machine timer was meant to reduce the number of personnel from enforcing what should be a routine transaction of money for a period of curbside parking; the cost of human parking enforcement is very, very high. Also inefficient: At any given time, meters are timing out somewhere on an enforcement officer's route, unseen and – worse! – unticketed.

On the other side of the equation, what do people looking for a parking spot for a relatively brief period – to go to a restaurant for lunch, visit a doctor, attend a meeting, shop at a store – really want? Obviously, they want to find a parking spot and are generally willing, within reason, to pay for an hour or two. Nothing is more frustrating than to have to drive around and around (and around…) a block, looking for an open spot. More and more, owners of cars parked in front of timed-out meters are not seen as a blow against The Man so much as an example of a freeloader who is taking up a needed spot. Of course, when they do find a spot, the drivers don't want to have to worry about racing out onto the curb in the middle of a meal in order to "feed the machine" before they get ticketed, themselves.

The New Barcode
Pay by Plate Pay Stations

PLATE#

Enter the smart meters. License plates double as parking permission stickers in a web integrated system developed by Cale America and gtechna. In recent years, parking meter technology has advanced to the point that "smart meters" are now installed in many cities across North America. Parking enforcement has become much more efficient and accurate with pay by license plate systems and enforcement software that run on the handheld devices. Once a customer has made a purchase, enforcement handhelds are updated within 5 seconds of any payment. Tight integration between smart meters and eCitation software simplifies the parking process for both PEOs (Parking Enforcement Officers) and parkers.
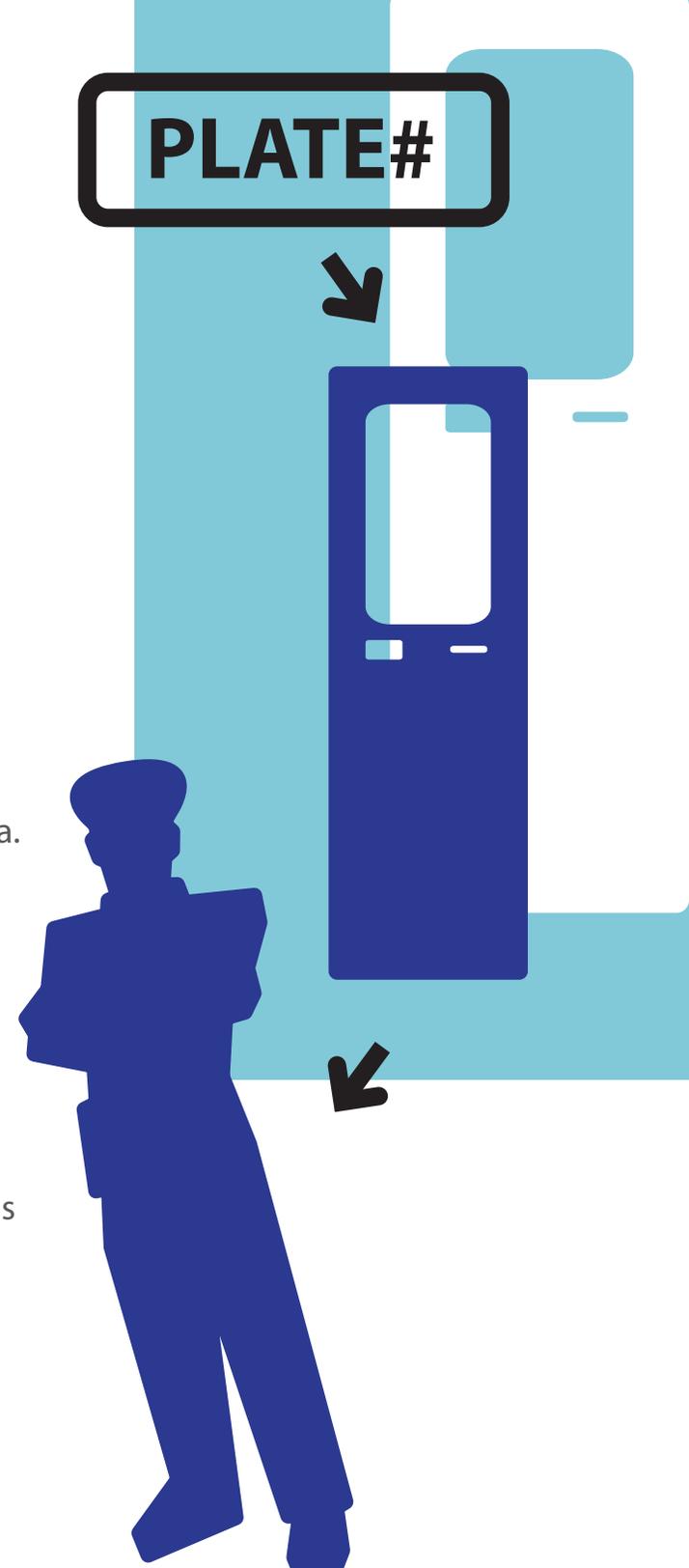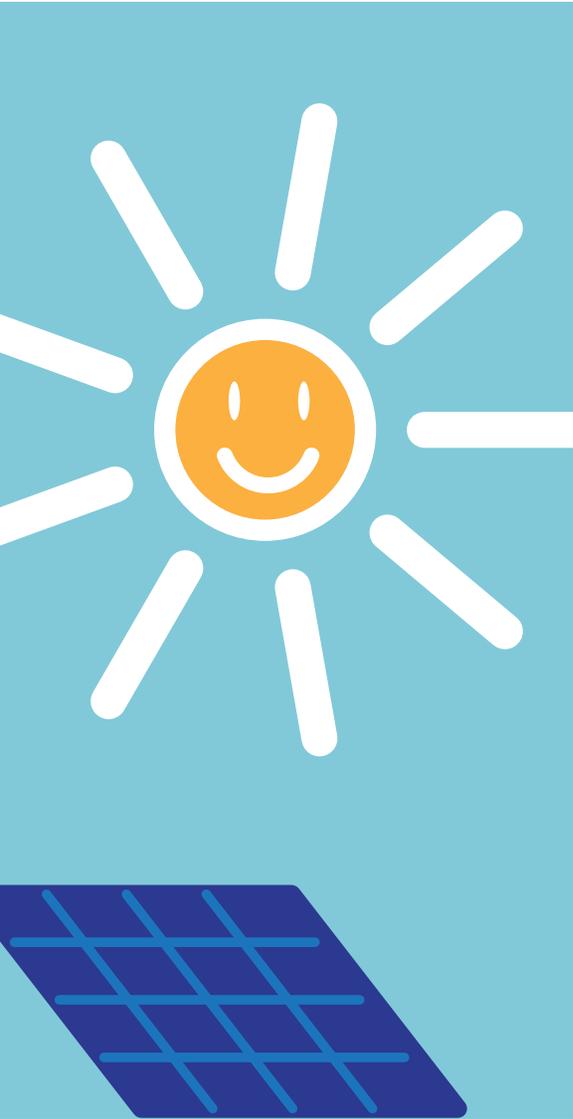
We are seeing a trend where increasingly, cities like Pittsburgh, PA are becoming technology leaders turning to integrated intelligent parking enforcement solutions for greater efficiency. Pittsburgh uses a pay-by-license plate technology that provides many advantages to customers. After purchasing time from the meter, customers do not have to return to their vehicles to display a receipt. Receipts are available, but are optional and are not required for compliance. In addition, customers are now able to pay at any pay station in each rate zone for added convenience.

Further, with non-outlined spaces, it is a win-win situation: parkers spend less time searching for a space and, more vehicles can be parked per city block allowing cities to gain additional assets for generating revenue. Because of these enhancements along with the acceptance of credit cards for payment, the meter upgrade project in Pittsburgh has received much praise from the business community as well. Some units are even solar powered appealing to large cities seeking eco-friendly green alternatives. Pittsburgh's upgrades have provided user-friendly amenities that benefit downtown workers, visitors and residents creating a more harmonious, smooth- functioning urban ecosystem.

Technology has helped to address the needs of both the city and the driver in a fairly equitable manner allowing parking enforcement units to become more efficient, which reduces the overhead of fee collection and maximizes revenue. People who park their cars have more options on methods of payment (no more hoarding precious quarters!) and, in some models, even reserve parking spaces in advance. Ticketing can increasingly be done through the mail: Fewer enraged curbside confrontations; those awkward confessions to the wife that you just might have to pull a 30-day stretch in the county jail for clocking a civil officer over a parking ticket will be a thing of the past. City resources will be freed up for more important things, such as finally removing mimes from the public sidewalks.

While the new technologies are more expensive than the older style mechanical units, experience has shown that net revenues increase so much that the new machines quickly pay for themselves, and even begin to show positive cash flow.
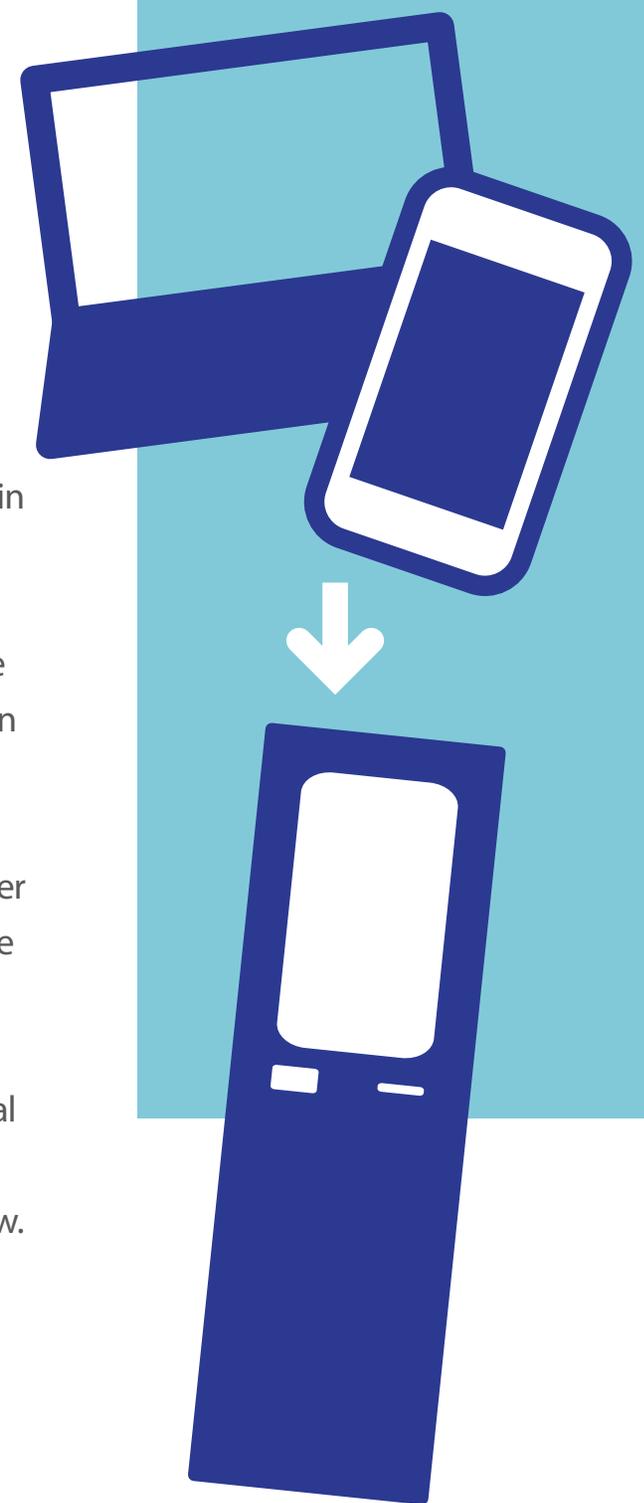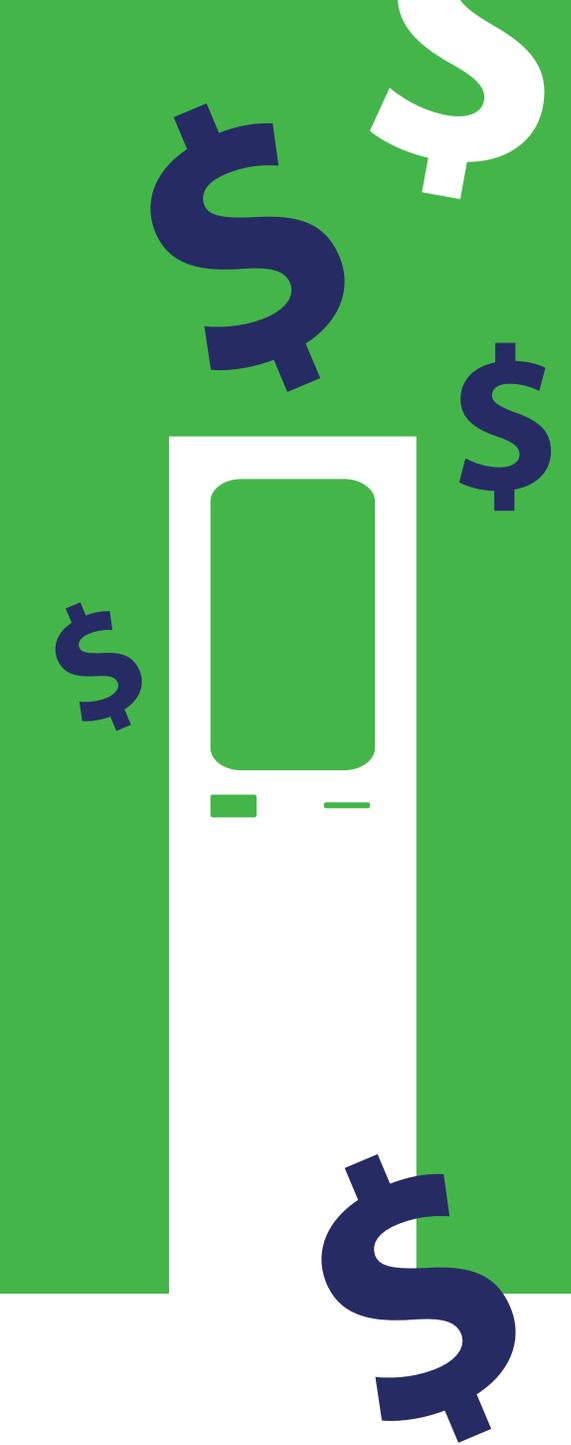
In Portland, Oregon, for example, new smart meters that accept payment by coin or credit/debit/smart cards were installed. The customer receives a receipt with a sticky stripe, allowing it to be placed inside the front window, facing the street, which makes enforcement simply a matter of officers patrolling from their cars and noting expired receipts. The units are even solar powered, which fits with Portland's "eco-friendly" reputation (although somewhat at odds with the number of overcast days in the Pacific Northwest). A study by the engineering firm DKS Associates reports that Portland's parking revenues increased from $7.5 million before the meters were installed to $9.7 million the first year they were in service.

Even though smart meters require a more committed investment, they are known to be so efficient and have so little down-time that they pay for themselves relatively quickly. Additionally, parking enforcement solutions providers are increasing moving toward more comprehensive packages that recognize the growing popularity and high adoption rates of these technologies in smaller cities. As a result, pay-per-use software models that work on an operational expenses budget are becoming more common.

The same DKS Associates report also showed a success in Park City, Utah, where the municipality went from free parking to smart meters in a single leap with relatively little public resistance. The success may be partly attributable to the ease of payment and use: Pre-paid, in-car meters with discounted parking fees were made available. These meters can be hung from the rear-view mirror when the car is parked, allowing passing police patrols to determine if there is still time left on the meter. Despite, or perhaps because of, 'Parking War-like' scenarios, San Francisco has also shown some forward-looking thought to at least part of its parking problems. San Francisco has introduced a new parking system in commuter parking areas at their BART (Bay Area Rapid Transit) stations. Users can reserve a space via the Internet or through their smart phones. The system's name – remember, this is San Francisco – is ParkingCarma.

The need, and subsequent cost, for human enforcement has also been reduced by the introduction of the PhotoViolationMeter. This meter with the somewhat Orwellian name (no, it does not violate the user) accepts payment in a variety of forms before taking a photograph of the car (including the license plate). If the customer enters his or her telephone number into the kiosk, the meter will even call to remind the user when the vehicle is about to overstay its allotted time. There are no reports that any of these meters have achieved self-awareness. Yet.

The New Barcode

Paperless Permits

License plates can also double as paperless permits in permit only zones. Parking customers can purchase blocks of parking fees online – at home, on laptops or with smart phones – tied to the license plate of the car they are driving. There is no need for a sticker or a physical meter, either on the street (or parking lot) or on view in the car and any vehicle – including rentals – can be linked to the account. A city can establish different parking fee rate zones with signage, instead of having to re-set individual meters. Building managers for offices, retailers and private lots can provide free parking for employees and customers with keystrokes instead of tokens, coupons or decals. Parking enforcement officers use hand-held units or license plate recognition camera equipped vehicles to scan license plates and the nearest foot officer can be dispatched to issue a ticket to the offending vehicle.

A similar system has already been introduced in Whistler, British Columbia. A pay-by-plate parking solution was deployed for the Whistler Parking Authority. With so many visitors during high season, parking enforcement in Whistler presents unique challenges. In order to accommodate for the local population as well as frequent population fluctuation, Whistler has constructed massive parking lots the size of four football fields.

In the past, parking access has been controlled using a "pay-and-display" system but this process has proven to be less effective and cumbersome for both users and enforcing officers. With so many cars coming in and out of lots, to visually scan and enforce time-delimited parking for thousands of vehicles in an off-street setting would be inefficient and impractical. In order to to improve performance, maximize efficiency and reduce costs pay by plate technology was used to increase patrol areas without additional staff.

Whistler's parking authority required an automated, user-friendly parking management system to properly serve its visitors. Users pay for parking using a vehicle licence plate number; no need for a permit on the dashboard, no need to remember a space number. Further, the officer no longer has to walk around each vehicle to manually validate permit expiration.
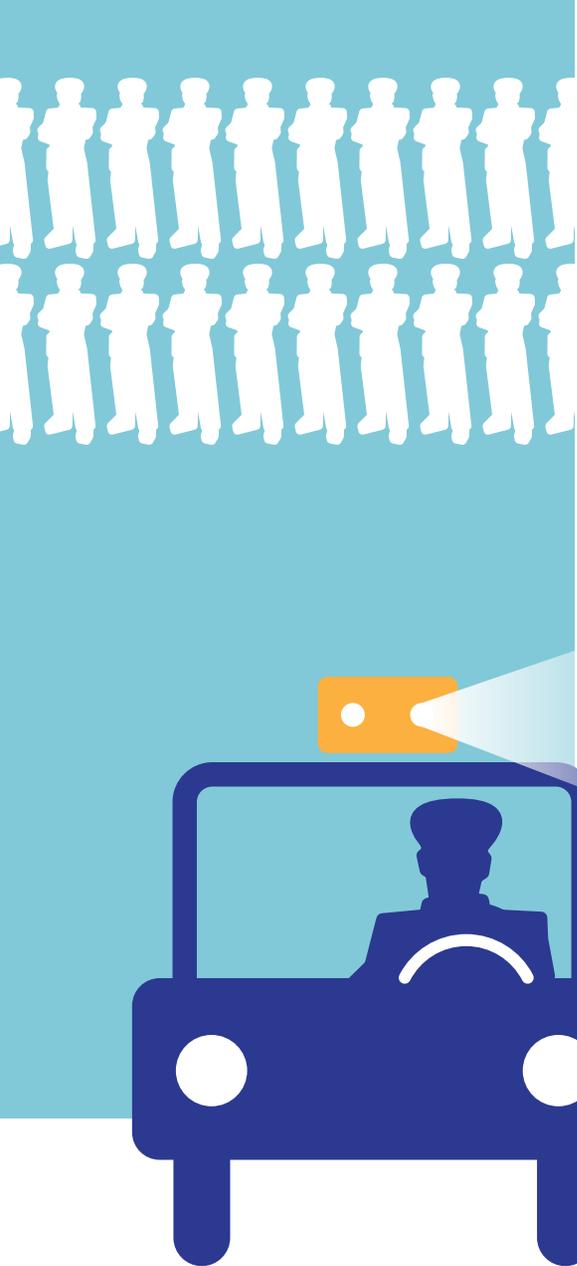
License plate recognition camera equipped vehicles were deployed with an integrated pay-by-plate and enforcement software solution to streamline a large-scale parking operation. License plate recognition cameras automatically scan licence plates to determine whether or not the vehicle has the right to be parked in the lot. Once a plate has been scanned, the enforcement software performs a 'white-list' look-up on the vehicle record. A single officer can now scan up to 4000 vehicles per shift making it possible to sweep large areas in record timing.

As technology progresses, parking ordinances are or should gradually evolve to accommodate up and coming innovations such as photo violation technologies not only to make issuing an eCitation easier, but to gain economies of scale by increasing productivity. Proven performance of vehicle mounted License Plate Recognition (LPR) camera systems are showing statistics of 4000 vehicle plates scanned in an enforcement work shift. It would take roughly 20 on foot officers in the same period of time to enforce time delimited zones as a single LPR vehicle. On top of the performance, there is the added value of vehicle and license plate images captured and stored as well as GPS coordinates converted to civic addresses to mark the location of the parked vehicle.

An App a Day…

Today, parkers and parking enforcement officers have technology at their finger tips, literally, within 'apps' reach, on a smart phone or tablet. Press a button to issue an eCitation to the scofflaw violator who just won't learn or, a parker can enjoy the ease with which a space can be secured or renewed by phone, by plate number or both. Will this bring an end to 'ticket rage'? Unfortunately to the chagrin of the parking enforcement officer probably not but, with advancements in parking software, it certainly is the right step toward improving officer safety. With quick print and delivery of an eCitation we can only hope for a more peaceful and harmonious co-existence!

Epi logue

L et's for a moment go back to where we began at the birth of the meter in 1939. Officers relied on a system of placing chalk marks on the tires of parked cars, checking later to see if the cars had been moved. Wait! Doesn't that sound awfully familiar? With all of the technological advancements today, some municipalities and cities still rely on this antiquated method.

Look out for more to come on eChalking and how it may be about time to put old enforcement methods out to pasture!